All-Aspect

April - June 2012

"All-Aspect" is a quarterly newsletter from the U.S. Army's Combat Readiness/Safety Center (USACR/SC) presenting relevant SAP-A information as well as safety related articles and sound bites.

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Answering the SAP-A Hate Mail

When the Army decided to conduct both a Beta and Operational test of SAP-A, a highly researched decision was made at the Safety Center to require a SAP-A report after every flight in an effort to validate the program's true potential. It was clearly understood that all of you already had, or were approaching, a full plate of administrative duties. However, Army decision makers felt, based on the success of similar programs at the U.S. Navy, major commercial airlines, and hospitals, that the potential value of the program warranted the extra effort.

The program is designed to incorporate many of the safety-related administrative functions you currently perform; ultimately simplifying your life. By design, SAP-A is a living program, one that has changed and will continue to change based on your inputs. Many of you think the information is going into a black hole; you're wrong. Every SAP-A report is reviewed and mined for actionable information; even the ones asking us to perform some anatomically impossible act with our heads. The people analyzing the data have been in the business of working with high risk operations for more than 40 years. They are familiar with taking hits from highly skilled professionals who think programs like SAP-A are a waste of their valuable time. That was exactly the reaction of emergency room Doctors when asked to participate in the medical version of SAP-A. But after they realized that business as usual was not going to reduce the 15,000 foreign objects left in patients after surgery each year, the 50,000 cases of "wrong site" operations each year, and the estimated 200 people who die every day from medical errors, they got onboard. Once they decided to give the program a try, the results made them ardent supporters. Why? Because the program saved lives and fixed problems, not blame. In the end, the decision to participate constructively in SAP-A is yours. If you give it an honest shot, it can help save lives, airframes, and maintain readiness.

Aviation Gouge

Occasionally, being able to know when you can really expect to enter the bottom of cumuliform clouds can help when trying to join a formation before you go in the soup, or determining if you can operate safely below a cloud deck. The weather people will give you their best guess, but you can get a pretty accurate measurement by using the following formula: Using the latest temperature/dew point reading available:

1. Subtract the dew point from the temperature.

2. Now take the number from step one and divide it by 4.4 if you are using "F or Fahrenheit" or 2.5 if you are using "C or Celsius."

3. Now multiply that number by 1000 and you have a good estimate of the altitude at which you will enter the first layer of clouds in your area.

Example: Temperature is 77°F / Dew point is 53°F; you can expect the bottom of the clouds at:
(77-53) = 24; 24/4.4 = 5.45; 5.45 X 1000 = 5450 feet AGL

The Dreaded Visual Approach

(Credit: Operator's Guide to Human Factors in Aviation and Boeing)

Correctly judging the required angle of approach to a landing runway without any visual or electronic guidance is one of the toughest maneuvers in aviation. Conducting these "eyeball only" approaches at night is even more challenging considering the lack of visual cues to lit objects and runway lighting systems.

A Special Night-Only Case: The Black Hole Effect:

A black-hole approach illusion can happen during a final approach at night (no stars or moonlight) over water or unlit terrain to a lighted runway beyond when the horizon is not visible. If the pilot has no peripheral visual cues to be oriented relative to the earth, there may be the illusion that you are upright and the runway itself is tilted and sloping. A particularly hazardous black-hole illusion involves approaching a runway under conditions with no lights before the runway and with city lights or rising terrain beyond the runway. These conditions may produce the visual illusion of being too high on final approach, resulting in pitching the aircraft nose down to decrease the perceived approach angle.

Some conditions make the black hole effect more pronounced:

Be alert for the illusion when you observe these conditions:

- An airport that is on the near side of a brightly lit city with few or no terrain features or lights between you and the airport. The brightness of the city lights will give the impression that they are closer than they are, especially if you are flying a long straight-in.
- An airport that is on the coast or in very sparsely settled terrain such as deserts and wilderness areas. This is the classic black hole scenario.
- A night with extremely clear air and excellent visibility. One of the things we use to judge distance is the normal hazing that distance provides. When the air is extremely clear, this lack of hazing makes things appear much closer than they really are.
- This is your initial entry to this airfield and you are not familiar with the runway's length/width relationship.
- The airport is at a lower elevation and on a different slope than the surrounding terrain.
- The runway lighting is poor and other landing aids are unavailable.
- The city lights are spread in an irregular pattern across hills on the far side of the airport, and the lights are obscured by smog, fog or other elements. Because of obscuring, lights appear dimmer and farther away than they really are.

Countermeasures:

The best way to counter illusions is to keep a good scan going on aircraft flight and engine instruments to confirm that an appropriate vertical profile is being flown no matter how good visibility appears to be. For a two-crew aircraft, this would be an appropriate task for the "Pilot Monitoring" (PM).

3rd CAB Commander's SAP-A Report Summary APR-JUN 2012

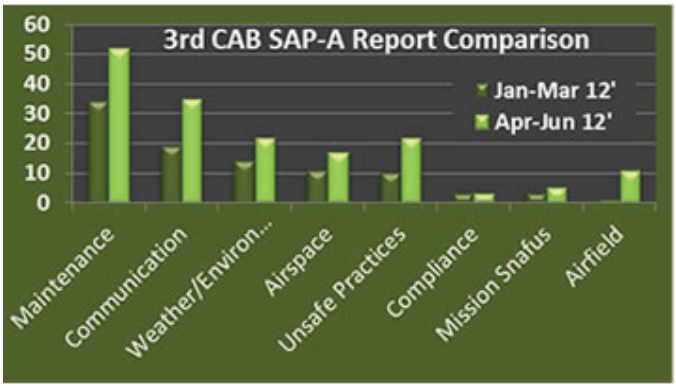
- **Total Reports: 608**
- **Total Reports with Comments: 163** (27% of total reports submitted)
- **Unit Participation Levels:** Total Reports (% of total)/ Reports with Comments (% w/comments)
  - **1-3 ARB:** 116 (19%) / 26 (16%)
  - **2-3 GSAB:** 156 (26%) / 73 (45%) – Unit submitting most reports with actionable comments
  - **3-17 CAV:** 146 (24%) / 30 (18%)
  - **4-3 AHB:** 187 (31%) / 33 (20%) – Unit submitting most reports for APR-JUN period
  - **603 ASB:** 003 (0.5%) / 01(0.6%)

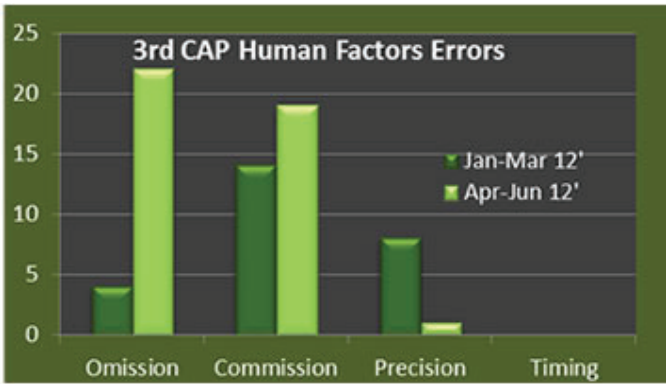
•Top Four Categories (% of reports with comments):

- **Maintenance (28%)**
- **Communication (19%)**
- **Unsafe Practices (12%)**
- **Weather/Environmental (12%)**

- **Potential Adverse Trend(s):** Fueling/refueling operations as identified by aircrews (see both Maintenance and Unsafe Practices Categories).

SAP-A Report Comparison *Jan-March '12 to Apr-Jun '12*





SAP-A Major Category "Points of Emphasis (POEs)"

the APR-JUN 2012 Quarter

#1 Maintenance:

If you have a problem with an aircraft, make a logbook entry - word of mouth reports can be easily misunderstood or forgotten by a distracted maintainer. And remember, the quality of your logbook write-up is directly proportional to the quality of the fix; make it count.

#2 Communications:

"It's Not Just See and Avoid": It seems the use of common hailing frequencies while operating or transiting work areas is not so common. The reports of Near Mid-Air Collision (NMACs) or aggressive maneuvering to avoid a NMAC are on the rise. The use of common frequencies to create situation awareness is a powerful tool; don't count on the big sky theory; **announce your presence!**

#3 WX/Environment:

"If you don't like the weather in the Southeast U.S. in the spring and summer, just wait 15 minutes": There have been a lot of SAP-A reports about unhappy customers with the weather product you've been receiving; **we hear you**. But I think you will all agree that predicting the weather in the Southeast U.S. during the spring and summer is extremely difficult. However, we hear you and will try to resolve your issues to get you a more reliable product.

#4 Unsafe Practices:

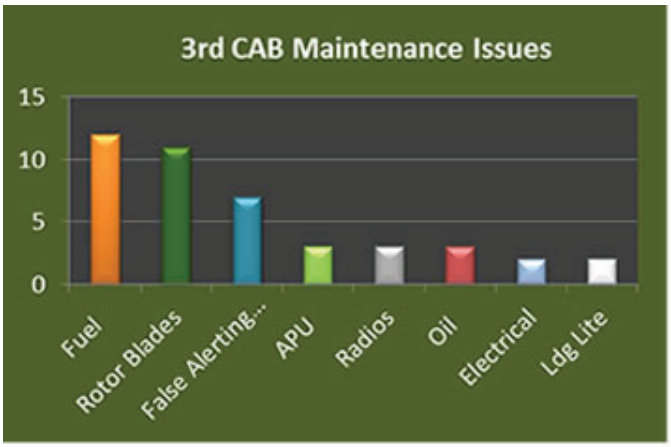
"If I Knew I Was Going to Live This Long, I Would've Taken Much Better Care of Myself": If you would like to be able to see, hear, and not explain strange gouges and scars on your face and head to your family or friends in future years, **wear your safety gear!** The reports of improper use of safety gear are on the rise, and that's not good. It's not just about you; remember, if you lose a team member, it weakens the team.

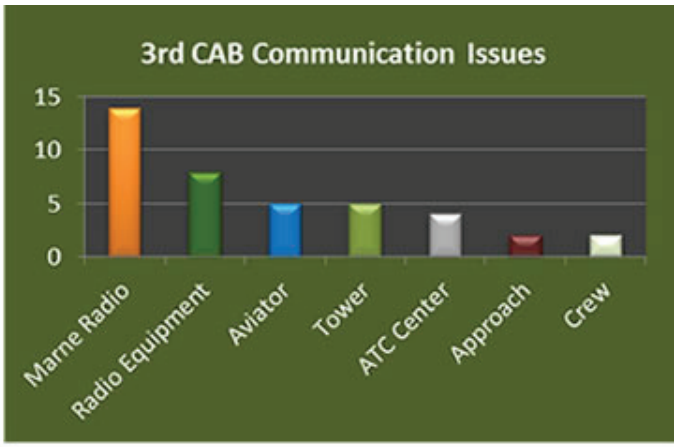
Aviation *Gouge*

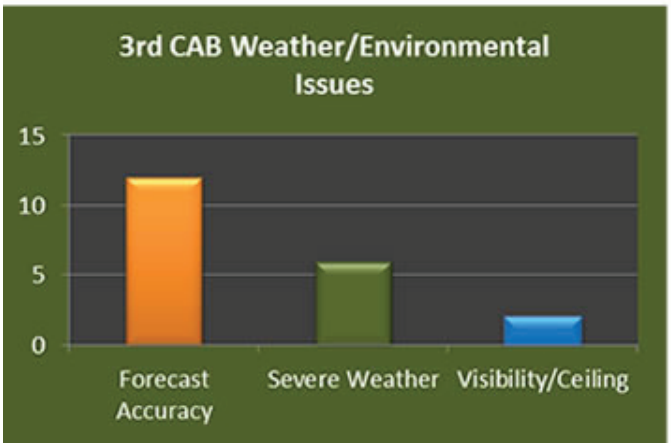
Determining Pressure Altitude: There are two ways to calculate pressure altitude. You can set the barometric scale of your altimeter to 29.92 and read the indicated altitude. That would be your current pressure altitude. You can also calculate pressure altitude by using a correction factor to the indicated altitude. You can do this by using the reported altimeter setting at your location. Once you have the altimeter setting, you can do the following equation: **Current Altitude - (Altimeter Setting - 29.92)*1,000.** Here is an example on how to calculate your pressure altitude:

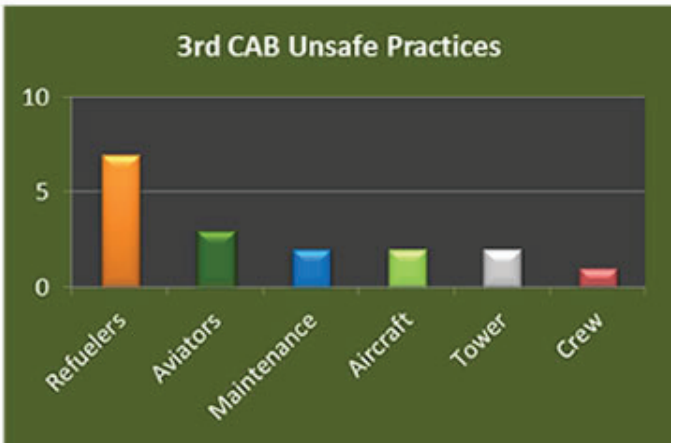
Current Altitude: 3,000 ft. MSL; Reported Barometric reading (altimeter setting): 30.12" Hg
3,000 - (30.12 - 29.92)*1000 = 3,000 - (.20)*1,000= 3,000-200= 2,800 ft.

Expanded *SAP-A Analysis*



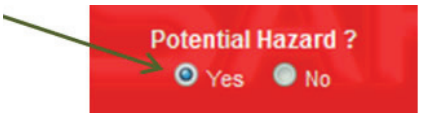






SAP-A *Tip*

Did you know that by marking your SAP-A report as a potential HAZARD you elevate it to a high risk or "red" status? If you believe your report clearly indicates a condition that needs to be addressed quickly, check this selection for potential hazard.



Aviation *Quote of the Quarter*

> "Aviation is proof that given the will, we have the capacity to achieve the impossible."
>
> ***- Edward Vernon Rickenbacker***